

Title (en)
METHOD FOR SOLID STATE ADDITIVE MANUFACTURING

Title (de)
METHODE FÜR SOLID STATE ADDITIVE MANUFACTURING

Title (fr)
PROCÉDÉ DE FABRICATION ADDITIF D'ÉTAT SOLIDE

Publication
EP 3416776 B1 20200415 (EN)

Application
EP 17702226 A 20170117

Priority
• US 201615045293 A 20160217
• US 2017013692 W 20170117

Abstract (en)
[origin: US2017232550A1] A method for forming an impact weld used in an additive manufacturing process. The method includes providing a wire having a powder filler metal core located within a sheath. The wire is then inserted within a conduit having an opening. Further, the method includes providing at least one energy pulse that interacts with the sheath to pinch off at least one segment of the wire, wherein the energy pulse causes propulsion of the segment toward a substrate with sufficient velocity to form an impact weld for welding the metal core to the substrate. In particular, the energy pulse is an electromagnetic pulse, a laser energy pulse or a high electric current pulse.

IPC 8 full level
C23C 24/02 (2006.01); **B23K 20/06** (2006.01); **B23K 26/06** (2014.01); **B23K 26/342** (2014.01); **B23P 6/00** (2006.01); **B33Y 10/00** (2015.01); **C23C 24/08** (2006.01); **F01D 5/00** (2006.01)

CPC (source: EP KR RU US)
B23K 20/06 (2013.01 - EP KR RU US); **B23K 26/342** (2015.10 - EP KR RU US); **B23P 6/00** (2013.01 - RU); **B23P 6/007** (2013.01 - EP KR US); **B33Y 10/00** (2014.12 - EP KR US); **C23C 24/02** (2013.01 - EP KR US); **C23C 24/04** (2013.01 - KR US); **C23C 24/08** (2013.01 - EP KR US); **F01D 5/005** (2013.01 - EP KR US)

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
US 10046413 B2 20180814; **US 2017232550 A1 20170817**; CN 108602154 A 20180928; CN 108602154 B 20200728; EP 3416776 A1 20181226; EP 3416776 B1 20200415; JP 2019507685 A 20190322; JP 6701340 B2 20200527; KR 102065323 B1 20200113; KR 20180114136 A 20181017; RU 2703742 C1 20191022; SA 518391685 B1 20210818; WO 2017142657 A1 20170824; ZA 201805477 B 20190626

DOCDB simple family (application)
US 201615045293 A 20160217; CN 201780007332 A 20170117; EP 17702226 A 20170117; JP 2018528994 A 20170117; KR 20187026420 A 20170117; RU 2018132738 A 20170117; SA 518391685 A 20180528; US 2017013692 W 20170117; ZA 201805477 A 20180816